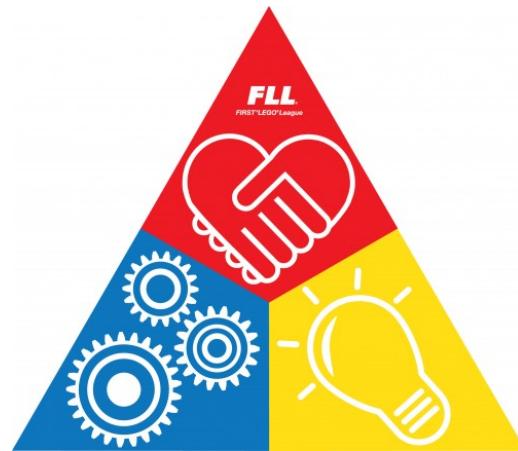


# FLL - New Coach Training

## Robot Game, Core Values, & Project



# There is a TON of information...

FLL sets recommendations, rules, and guidelines every year in their Coach's Manual.

2015-2016 Manual

<http://www.firstlegoleague.org/sites/default/files/Challenge/TRASH-TREK/FLL-CoachesHB%2715-%2716-TRASHTREK-Online.pdf>

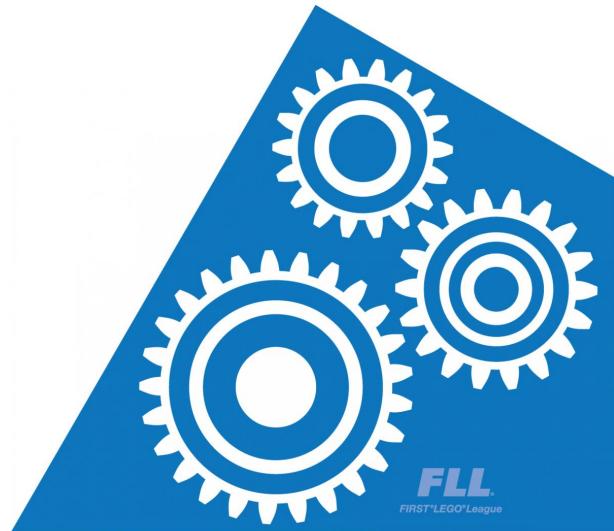
FLL Website Resources

<http://www.firstlegoleague.org/challenge/teamresources>



# Robot Game

- What the Coaches Handbook has to say...
- Lego NXT & EV3
- Robot Design Executive Summary
- Robot Design Judging
- Programming
- Table Missions
- Resources



ROBOT GAME

# What the Coaches Handbook has to say...

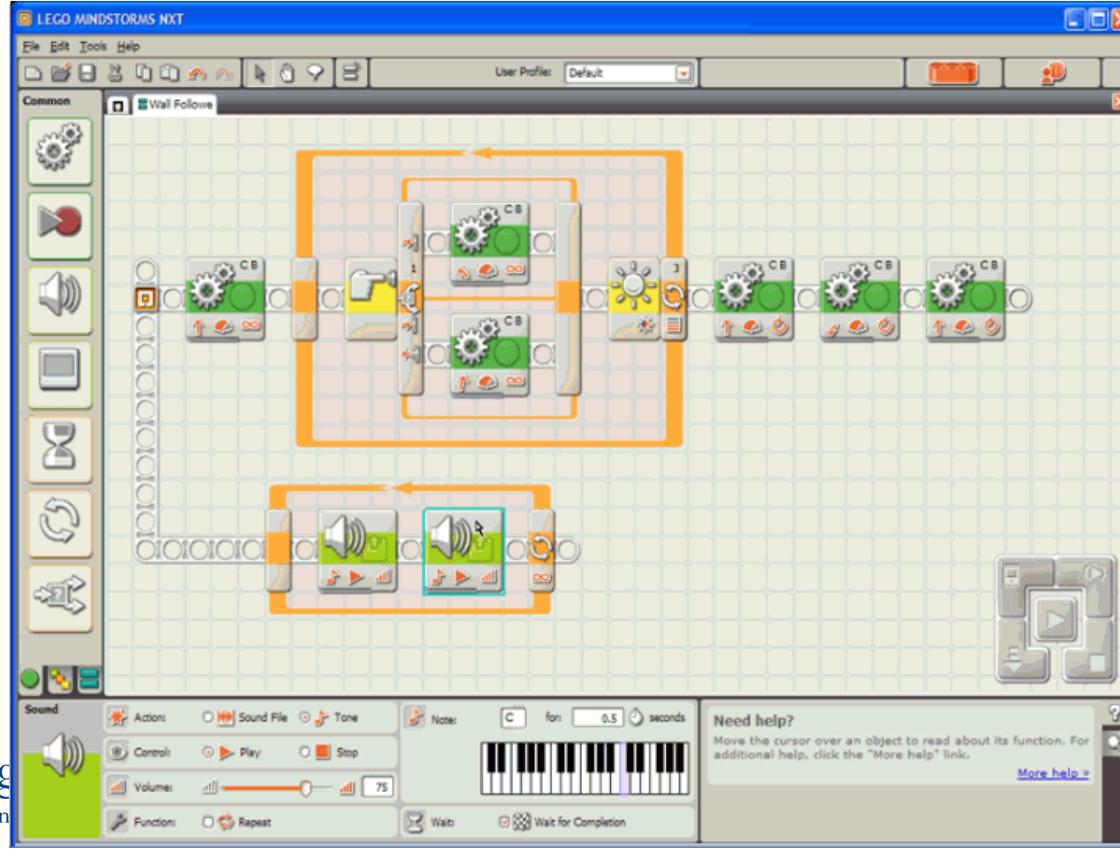
- Consider the importance of structural integrity and efficiency
- Find the right balance of robot speed, strength, and accuracy
- Value consistency
- Use code that is modular, streamlined, and understandable by others
- Not rely on driver intervention to help the robot navigate
- Focus on continuous improvement
- Develop a well-defined game strategy
- Be innovative

# Lego NXT & EV3 Comparison

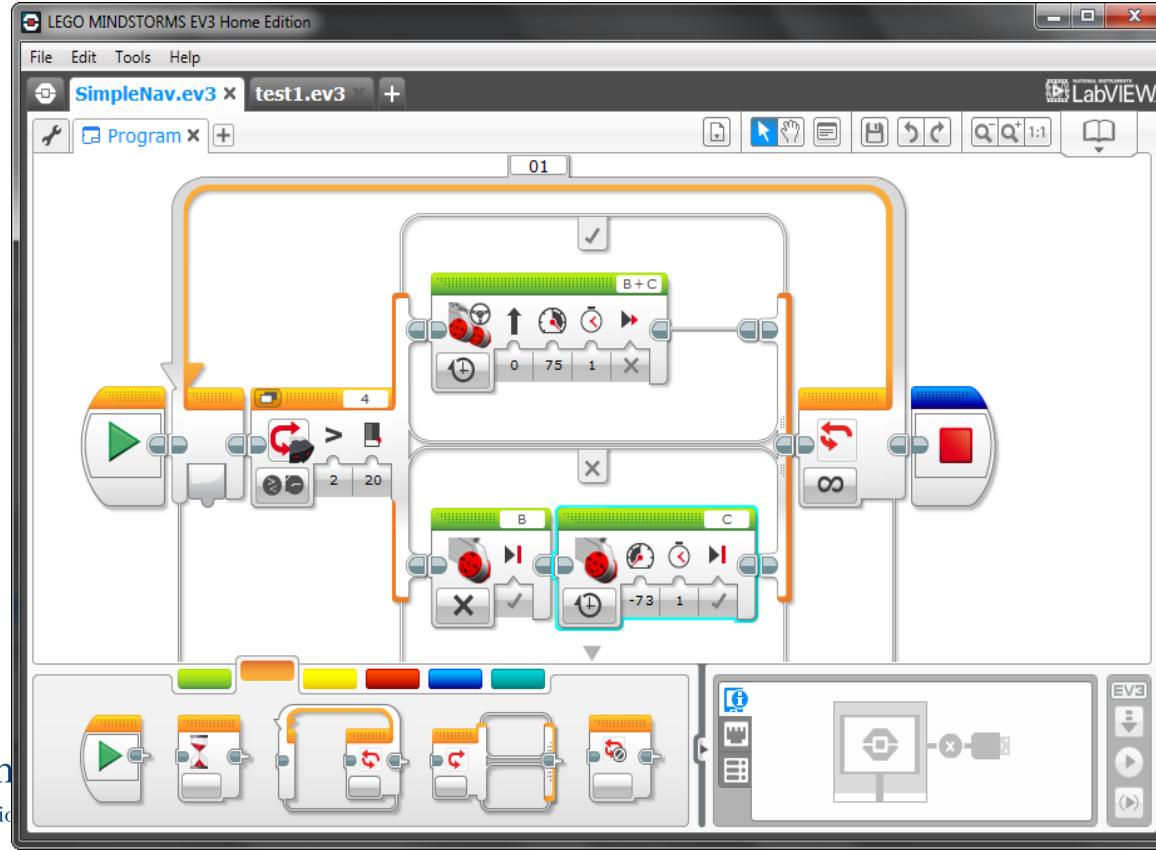
VS



# Programming with NXT



# Programming with EV3



# Socrative - NXT(A) or EV3(B)?

Use your phones or other devices to pull up [m.socrative.com](http://m.socrative.com) in a web browser.

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# Robot Design Judging

- Robot Facts and Design Details (4 minutes, also known as a “Robot Executive Summary”)
  - Fun
  - Strategy
  - Design Process
  - Mechanical Design
  - Programming
  - Innovation
- Trial Run of Robot on Field

# Robot Judging

- Explain how the robot moves around the board and describe how the parts work together to make it move.
- How many attachments did your team build for your robot?
- How many and what type of sensors does your robot use?
- Did you program the robot using NXT/EV3 (software with kit) or Robolab?
- How many programs are stored in the NXT/EV3 brick?
- How consistent are the programs (always successful, mostly successful, sometimes successful)
- How many missions can your robot attempt to complete?
- Are there any features of your robot that you feel are special, different or clever?
- Finally explain the solution of your favorite mission showing the judges the program and pointing out any specific attachments your robot uses to complete this mission.

# Table Mission - FLL WORLD CLASS



# Core Values

- The Core Values
- Gracious Professionalism
- Coopertition



# FLL Core Values

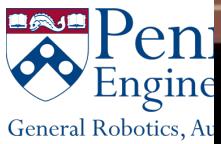
- We are a team.
- We do the work to find solutions with guidance from our coaches and mentors.
- We know our coaches and mentors don't have all the answers; we learn together.
- We honor the spirit of friendly competition.
- What we discover is more important than what we win.
- We share our experiences with others.
- We display Gracious Professionalism in everything we do.
- We have fun.



## Gracious Professionalism™

“It's a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community.”





General Robotics, Automation,  
and Mechatronics



# The Core: Gracious Professionalism

- Respect for the feelings, opinions, and culture of others.
- Respect for equipment.
- Good sportsmanship.
- Being friendly and polite at all times to all persons.

## The Good

- Fun physical pushing, shoving, or other kid behaviors
- Tossing LEGO's to each other
- Running when appropriate

## The Bad

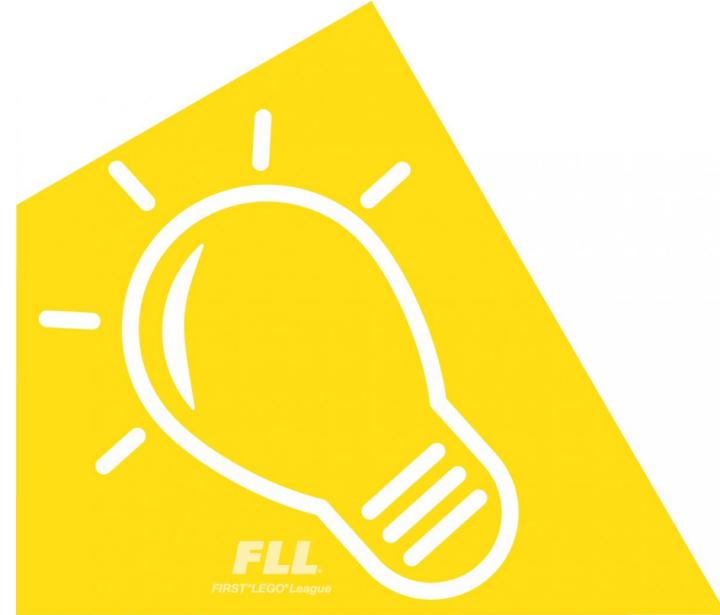
- Laughing at others mistakes
- Making negative comments about other teams, robots, shirts, mascots, etc.

# Coopertition

- Cooperation and Competition
- Once you have mastered a skill, you teach it to someone else so that everyone can do better next time.
- Example: Sharing a spare part or battery charger with another team so they have a chance to compete

# The Project

- Solving real world problems
- Field Trip and Expert Research
- Community
- Solution
- Presenting to judges



PROJECT

# Solving Real World Problems

- Teams research a real-world problem in the field of this season's Challenge theme
- Create an innovative solution to that problem
- Problem often is personal to the team or to a team member

# Field Trip and Expert Research

- Plan field trips that fit the Challenge
- Organize so that professionals on the field trip can speak to students
- Great team-building activity
- Encourage students to ask questions and start thinking about problems and solutions

# Community

- Reach out to local businesses, universities, and organizations
- Contact relevant professionals
- Have students consider needs of their community
- Organize having a professional come and speak with students
- Teamwork and a sense of community are necessary!

# Solution

- Steps of Project:
  1. Identify a Real-World Problem
  2. Create an Innovative Solution
  3. Share Your Research and Solution
- Share with audiences that can benefit from the solution
- Consider getting a patent.
- Don't reinvent the wheel. The project should be:
  - realistic.
  - scalable.
  - supported by research and development.
- Build on other ideas & solutions.

# Presenting to Judges

- 5 minute presentation ([YouTube Video](#))
- Must show judges that all three steps of the Project were completed
- Must show that the project was relevant to season challenge
- Second half of Project is Q&A
- They want to hear about the process!
- Want to hear about potential of solution and what is needed to make it a reality



Socrative - What aspect of FLL do you think you need to focus on the most for judging?

(A) Project (B) Robot (C) Core Values

Use your phones or other devices to pull up m.  
[socrative.com](https://socrative.com) in a web browser.

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